

Catfish in Iowa Lakes

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Contribution, and Survival of Stocked Muskellunge, and Population Dynamics of Adult Muskellunge in Spirit, East Okoboji, West Okoboji, and Clear Lakes

Recent advances in artificial feeding techniques have increased the numbers and reliability of producing muskellunge (*Esox masquinongy*) fingerlings in Iowa. Since 1984, most of the muskellunge produced in Iowa were raised on dry pelleted-feed. We compared the survival of pellet-reared to traditional minnow-reared muskellunge stocked into Spirit and West Okoboji Lakes in Northwest Iowa. Beginning in 1991, all muskellunge fingerlings have been marked with freeze brands to differentiate the type and year muskellunge were stocked. Adult muskellunge are caught each spring with 360 ft, 2.5 in bar mesh gillnets. All muskellunge caught are examined for brands, individually marked with Visual Implant or Passive Integrated Transponder tags, and released into the same lake as captured. Survival of stocked muskellunge and contribution to year-classes are estimated from recaptures of branded and individually marked muskellunge. In most years none of the pellet-reared fingerlings survived. The poor survival of these fish was most likely due to a combination of poor health, poor color (camouflage barring was muted and virtually nonexistent), and small size (6-9 in TL). Minnow-reared muskellunge fingerlings survived much better than pellet-reared fish. Minnow-reared fingerlings were much larger (10-13 in TL), with better camouflage barring, and no apparent nutritional problems. Minnow-fed yearlings stocked in the spring survived much better than these same fish stocked in the fall.

Muskellunge population densities in all lakes increased 4-11 fold after the spring-stocked yearlings recruited into the gill nets (1999). Adult muskellunge management objectives were achieved at least once in the past 6 years for both Spirit Lake and Clear Lake and every year since 2003 for the Okoboji lakes. Currently, muskellunge populations in these lakes are experiencing the highest level of recruitment (survival to adult size) ever recorded. A combination of successful research resulting in this high recruitment and maturing adult populations has allowed us to stock at lower numbers and on alternate years. One other benefit from these efforts includes decreased hatchery production of muskellunge resulting in more space available for other production efforts.

